UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,387	01/25/2005	Joachim Kiefer	3799.1002.000	1646

21005 7590 07/02/2007

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER	
PEZZUTO, HELEN LEE	
ART UNIT	**PAPER NUMBER**
1713	

MAIL DATE	DELIVERY MODE
07/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/506,387	KIEFER ET AL.	
	Examiner	Art Unit	
	Helen L. Pezzuto	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-22 and 24-35* is/are pending in the application.

4a) Of the above claim(s) *30-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-22 and 24-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *16-22 and 24-35* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/14/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 16-29 in the reply filed on 5/21/07 are acknowledged. The traversal is on the ground(s) that Groups I, III and IV share the same special technical feature (i.e. the same steps) and that the International Examiner did not find unity of invention lacking, and as such, examination of these claims places no additional burden on the Examiner. This is not found persuasive because the special technical feature (i.e. the proton-conducting membrane) which these groups share do not define a contribution over the prior art because of lack of novelty or an inventive step in view of the references set forth in this office action.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 30-35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 5/21/07.

Response to Amendment

Applicant's cancellation of claim 23 filed in the response on 5/21/07 is acknowledged. Currently, claims 16-22, and 24-29 are under consideration in this application.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 11/14/05 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly

or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 16-22, and 24-29 are rejected under 35 U.S.C. 102(b), 102(e), as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Andreola et al. (US-968) or Suzuki et al. (US-856) or Formato et al. (US-469).

US 5,643,968 disclose ion exchange membranes comprising graft copolymer having a backbone of a first polymer and a polymerizable vinyl monomer containing ion exchange functional groups. Suitable backbone polymer polymers include any polymer containing aromatic rings, inclusive of those containing nitrogen, oxygen or sulfur atoms in the recurring units as expressed in the present claims (col. 3, lines 24-35), and suitable functional vinyl

monomer include amides and esters of vinylsulfonic acid and vinyl phosphonic acids, which may be subsequently hydrolyzed by either acid or base if desired (col. 3, lines 58-65; col. 6, lines 25-65; col. 13, Example 10; col. 16, claim 3). Thus, forming the instant membrane product.

US 6,607,856 to Suzuki et al. discloses a solid polymer electrolyte membrane containing backbone polymer having functional chelate groups such as sulfonic acid and phosphonic acid groups (col. 5, line 11 to col. 6, line 23; col. 8, Example 1; col. 19, Example 13). The resultant membrane has a proton-conductivity of greater than or equal to $1x10^{-2}$ S/cm (col. 5, lines 6-10). Thus, yielding the instant membrane product.

US 6,248,469 to Formato et al. discloses a solid polymer electrolyte membrane having a porous polymer substrate interpenetrated with an ion-conducting material. Suitable polymer substrates include those containing at least one nitrogen, oxygen or sulfur atom in the recurring units as expressed in the present claims (col. 6, lines 22-50; col. 7, lines 1-29; col. 10, lines 9-18). The preferred ion-conducting material includes the instant polyvinyl sulfonic acid and polyvinylphosphonic acid (col. 7, lines 10-28; col. 14, lines 31-41). The resultant membrane has

ion-conductivity of greater than 0.1 S/cm (col. 12, lines 58-64). One of the method embodiments in producing the membrane comprises the step of preparing the substrate polymer and subsequently impregnating the substrate with the chosen monomers, which are then polymerized in situ to form the composite membrane (col. 8, lines 30-34; col. 17, lines 22-27). Thus, producing the instant membrane product.

The examiner takes notice that the present claims are presented in a product-by-process format. Thus, the patentability of the claimed invention is determined based on the product itself, not the method of making it. It is well settled that if the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process. Accordingly, when applicant's product and that of the prior art appear to be identical or substantially identical, the burden shifts to applicant to provide evidence that the respective products do in fact differ, and that prior art product does not necessarily or inherently possess the relied upon characteristics of applicant's claimed product.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 16-22, and 24-29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 20-26, and 28-31 of copending Application No. 10/506,387. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant membrane product encompasses the membrane product recited in the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Helen L. Pezzuto
Primary Examiner
Art Unit 1713

hlp